IN THE CLAIMS:

1. (Original) An optical resonator comprising:

multiple reflective surfaces for sustaining multiple internal reflections in a cavity formed between said reflective surfaces; and

an imaging lens positioned at a predetermined position along an optical path between a first and second one of said multiple reflective surfaces and having a predetermined focal length such that a first region on said first reflective surface is imaged onto a second region on said second reflective surface.

2. (Original) The optical resonator of Claim 1, wherein a focal length of said imaging lens is a predetermined focal length, wherein a focal point of said imaging lens is predetermined to intersect said second reflective surface, whereby said second region approximates a point.

3. (Currently Amended) The optical resonator of Claim 2, wherein [[a]] focal lengths of said imaging lens ~~is a~~ are predetermined focal lengths ~~approximately half of a separation between said first and said second reflective surface, whereby a~~ such that focal points of said imaging lens ~~is~~ are predetermined to intersect said second reflective surface on a first side of said imaging lens

and said first reflective surface on a second side of said imaging lens, whereby said first region[[s]] and said second region approximate points.

4. (Original) The optical resonator of Claim 1, wherein said imaging lens is positioned and a focal length of said imaging lens is a predetermined focal length such that, focal points of said imaging lens are predetermined to fall substantially beyond said first reflective surface and said second reflective surface, whereby said first region is an area of said first reflective surface and said second region is an area of said second reflective surface.

5. (Original) The optical resonator of Claim 4, wherein said first reflective surface and said second reflective surface are positioned such that an optical path length between a first set of points comprising said first region and corresponding points of a second set of points within said second region is a multiple of one-half of a predetermined optical wavelength.

6. (Original) The optical resonator of Claim 5, further comprising a focusing lens positioned between said imaging lens and said first reflective surface for focusing an image of a point within said second region of said second reflective surface on a point within

said first region of said first reflective surface.

7. (Original) The optical resonator of Claim 1, wherein said first reflective surface and said second reflective surface are positioned such that an optical path length between first set of points comprising said first region and corresponding points of a second set of points of a third region displaced from said second region is a multiple of one-half of a predetermined optical wavelength, whereby surface features of said second reflective surface approaching or intersecting said third region resonate with said first reflective surface, while surface features not approaching or intersecting said third region do not resonate with said first reflective surface at a predetermined optical wavelength.

8. (Original) The optical resonator of Claim 1, wherein said imaging lens is a plano-convex lens having a planar surface and an opposing convex surface, wherein said first reflective surface is a partially reflective surface formed by a partially reflective coating deposited on said planar surface of said imaging lens.

9. (Original) The optical resonator of Claim 1, wherein said imaging lens is a plano-convex lens having a planar surface and an opposing convex surface, wherein said first reflective surface is a

substantially totally reflective surface formed by a substantially totally reflective coating deposited on said planar surface of said imaging lens.

10. (Original) The optical resonator of Claim 1, further comprising a mask positioned at said first reflective surface, whereby said mask is imaged onto said second reflective surface by said imaging lens.

11. (Currently Amended) An optical system for detecting features of a surface of interest ~~under observation~~, said system comprising:

an illumination subsystem for producing an illumination beam;

a detection subsystem for detecting a beam reflected from said surface of interest ~~under observation~~; and

a resonator positioned in an optical path between said surface under observation and said illumination subsystem for increasing an effective resolution of said detection subsystem, said resonator comprising

multiple reflective surfaces, including at least said surface of interest and at least one other reflective surface for sustaining multiple internal reflections in a cavity formed between said reflective surfaces, and

an imaging lens positioned at a predetermined position along an optical path between ~~a first and second one of~~ said

at least one other ~~multiple~~ reflective surface[[s]] and said surface of interest and having a predetermined focal length such that a first region on said ~~first~~ at least one other reflective surface is imaged onto a second region on said ~~second reflective~~ surface of interest.

12. (Original) The optical system of Claim 11, wherein said surface of interest comprises a surface of an optical storage media, and wherein said detection subsystem includes a data detection block for detecting data stored on said optical storage media.

13. (Original) The optical subsystem of Claim 11, wherein said surface of interest is a surface under inspection, wherein said detector detects surface variations of said surface under inspection and wherein a minimum feature size of detectable surface variations is decreased by action of said resonator.

14. (Original) The optical system of Claim 11, further comprising a scanning subsystem for mechanically moving one of said surface of interest or said resonator relative to the other, whereby features of said surface of interest are detected by said detection subsystem.

15. (Currently Amended) The optical system of Claim 11, wherein a

focal length of said imaging lens is a predetermined focal length, wherein a focal point of said imaging lens is predetermined to intersect ~~said second reflective surface~~ said surface of interest, whereby said second region approximates a point.

16. (Currently Amended) The optical system of Claim 15, wherein [[a]] focal lengths of said imaging lens ~~is a~~ are predetermined focal lengths ~~approximately half of a separation between said first and said second reflective surface, whereby a~~ such that focal points of said imaging lens ~~is~~ are predetermined to intersect said ~~second reflective~~ surface of interest on a first side of said imaging lens and said ~~first~~ at least one other reflective surface on a second side of said imaging lens, whereby said first region[[s]] and said second region approximate points.

17. (Currently Amended) The optical system of Claim 11, wherein said imaging lens is positioned and a focal length of said imaging lens is a predetermined focal length such that, focal points of said imaging lens are predetermined to fall substantially beyond said ~~first~~ at least one other reflective surface and said ~~second reflective~~ surface of interest, whereby said first region is an area of said ~~first~~ at least one other reflective surface and said second region is an area of said ~~second reflective~~ surface of interest.

18. (Currently Amended) The optical system of Claim 11, wherein said at least one other ~~first~~ reflective surface and said ~~second reflective~~ surface of interest are positioned such that an optical path length between a first set of points comprising said first region and corresponding points of a second set of points within said second region is a multiple of one-half of a predetermined optical wavelength.

19. (Currently Amended) The optical system Claim 11, further comprising a focusing lens positioned between said imaging lens and said first reflective surface for focusing an image of points within said second region of said ~~second reflective~~ surface of interest on corresponding unique points within said first region of said ~~first~~ at least one other reflective surface.

20. (Currently Amended) The optical system of Claim 11, wherein said ~~first~~ at least one other reflective surface and said ~~second reflective~~ surface of interest are positioned such that an optical path length between first set of points comprising said first region and corresponding points of a second set of points of a third region displaced from said second region is a multiple of one-half of a predetermined optical wavelength, whereby surface features of said ~~second reflective~~ surface of interest approaching

or intersecting said third region resonate with said at least one other ~~first~~ reflective surface, while surface features not approaching or intersecting said third region do not resonate with said ~~first~~ at least one other reflective surface at a predetermined optical wavelength.

21. (Currently Amended) The optical system of Claim 11, wherein said imaging lens is a plano-convex lens having a planar surface and an opposing convex surface, wherein said ~~first~~ at least one other reflective surface is a partially reflective surface formed by a partially reflective coating deposited on said planar surface of said imaging lens.

22. (Currently Amended) The optical system of Claim 11, further comprising a mask positioned at said ~~first~~ at least one other reflective surface, whereby said mask is imaged at said second region by said imaging lens.

23. (Original) A method improving resolution of a resonator-enhanced optical system, said method comprising:

reflecting light between multiple parallel reflective surfaces to provide multiple internal reflections; and

imaging a first region of a first one of said reflective surfaces on a second region of a second one of said reflective

surfaces with an imaging lens, whereby a divergence of said multiple internal reflections is reduced, improving said resolution.

24. (Original) The method of Claim 23, wherein said first reflective surface is a partially reflective surface and said second reflective surface is a surface of interest, and wherein said method further comprises:

scanning said surface of interest and said first reflective surface relative to each other; and

detecting light emitted from said first reflective surface produced by reflections from said surface of interest, whereby a minimum detectable size of features of said surface of interest is decreased by action of said imaging.

25. (Original) The method of Claim 23, wherein a focal length of said imaging lens is a predetermined focal length, wherein a focal point of said imaging lens is predetermined to intersect said second reflective surface, whereby said second region approximates a point and wherein said imaging images said point on an area of said first reflective surface.

26. (Currently Amended) The method of Claim 23, wherein said imaging lens is positioned and a focal length of said imaging lens

is a predetermined focal length such that[[,]] focal points of said imaging lens are predetermined to fall substantially beyond said first reflective surface and said second reflective surface, wherein said imaging images a first area on said first reflective surface to a second area of said second reflective surface.

27. (Original) The method of Claim 26, further comprising focusing said multiple reflections through a focusing lens positioned between said imaging lens and said first reflective surface to image points within said second region of said second reflective surface on corresponding unique points within said first region of said first reflective surface.

28. (Original) The method of Claim 23, further comprising, masking light reflected at one of said multiple parallel reflective surfaces, whereby an image produced by said masking is imaged by said imaging at another one of said multiple parallel reflective surfaces.